Women in physics in the Netherlands

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Women in physics in the Netherlands: Recent Developments

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Abstract. Although women are still a small minority in physics in the Netherlands, their visibility has increased markedly over the past five years. The measures put in place after the first IUPAP Women in Physics Conference in 2002 have in fact not increased the total number of female staff, but put the spotlight on female talent in physics. Affirmative actions by Dutch science faculties and physics departments have brought about a more than fivefold increase of female full professors: by now only one university is left without a female chair. At the assistant and associate professor levels, the MEERVOUD and ASPASIA programs of NWO (the national funding agency for scientific research) have been a success. The FOm/f program of the Foundation for Fundamental Research on Matter has accomplished its goal of stimulating the participation of women in physics through covering salary costs, giving research funding and postdoctoral positions, and highlighting outstanding female physicists through the MINERVA prize. Despite these success stories, the number of female physics students is still far too low, and even if there is an important influx of foreigners at all career levels from the PhD student upward, reaching 10% women in permanent positions in physics is still a goal for the future.

Keywords: women in physics, affirmative action, gender mainstreaming, attracting girls into physics, the Netherlands
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Since the first IUPAP Women in Physics Conference in 2002, quite a few actions have been taken to improve gender mainstreaming in physics in the Netherlands. Here we shall focus on the following aspects: increasing the number of girls who start physics studies; percentage of female staff of the Foundation for Fundamental Research on Matter (FOM); success of the FOm/f program (m/f stands for male/female); the special initiatives by NWO (the national funding agency for scientific research); and special initiatives by universities.

All over the world there have been many initiatives in the last five years to increase the number of physics students, the most noticeable being linked to the World Year of Physics in 2005. In fact, physics is not as attractive a subject for university students as it was at the end of the 1980s and beginning of the 1990s, when there were 50% more first-year students than today in the Netherlands.

The Dutch initiatives have managed to turn around the negative trend and, most importantly, succeeded in reaching the high school girls. For example, the percentage of female participants in the physics Olympiads has gone up from around 21% in 2002 to more than 27% in 2008—this increase in the number of girls who make their fascination for physics known is even more important when one considers that over the same period the total number of participants in the first round of the physics Olympiads has nearly tripled.

This growth in the number of high school girls interested in physics also translates into more female physics students in universities. In fact, while the total increase in first-year physics and astronomy students between 2003 and 2007 was below 7%, the percentage of female students increased from 11.8 to 16.5%, according to statistics from the Netherlands Physics Olympiad Foundation. One has to realize, however, that although Dutch physics and astronomy are rather visible internationally, the student numbers are very small (around 600 first-year students nationwide in each of the last three years).

All physicists who graduate in the Netherlands immediately find positions and there is also a steady flow of foreigners to fill vacancies in Dutch research. The Foundation for Fundamental Research on Matter (FOM) promotes, coordinates, and finances fundamental physics research. FOM employs both tenured and temporary personnel at research institutes and in university laboratories. While the percentages of women in tenured FOM positions and that of female PhD students have remained constant at 3% and 20%, respectively, the percentage of female postdoctoral researchers has seen a gradual decrease from 26% in 2003 to 16% in 2007. One has to take into account that here we are considering a rather small number of individuals (48 female postdoctoral researchers in 2003 and 18 in 2007), so a statistical analysis of the causes for this decrease is difficult. Anecdotal evidence points to a preference for positions in industry rather than academic research after the PhD because the former are perceived as more secure, i.e., leading quickly to a tenure.

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The NWO (the national funding agency for scientific research) introduced two important measures to improve gender mainstreaming in Dutch research: MEERVOUD, aiming at promoting more women to tenured positions of assistant professor, and ASPASIA, aimed at promoting more women from the assistant to the associate level. MEERVOUD supported 35 projects; however none was related to physics. ASPASIA supported 86 projects, four of which were related to physics. These numbers testify to the exceedingly small number of women in physics, and hence the small number of physicist candidates for such measures.

More successful in the Dutch physics community were the affirmative actions by the science faculties and the physics departments of the various universities who have systematically searched for female candidates when filling full professor vacancies and started special programs to attract female talent for tenure track positions. At the full professor level this has brought about a more than fivefold increase: by now only one university is left without a female chair. However, the Netherlands is not going to reach the Lisbon criterion of the European Union, which aimed to have 25% of all university professors being women by 2010. The Dutch Ministry of Education, Culture and Science has relaxed the criterion to 15% for the Netherlands, but even that will be very probably not be achieved for physics, despite a lot of good will on behalf of the universities.

Nevertheless, more women at the professor level may happen soon. Initiatives like the Rosalind Franklin Fellowship program of the University of Groningen are demonstrating that change is possible. The program is now in its third round since 2003—each time five tenure-track positions reserved for women were made available for the Faculty of Mathematics and Natural Sciences and each time there were more than 100 candidates. Among the laureates there were a total of five physicists, and the first one has already moved on to the associate professor level.

Very important support for the young female physicists in the Netherlands has come from the FOm/f program of the FOM. The MINERVA prize, which is given biannually for the best physics paper authored by a woman, is now recognized as a very prestigious award and has reached its goal of bringing excellent female physicists into the spotlight and advancing the career of the prize winner. The Minerva-Prize comes with a sum of €5,000.

Other initiatives of the FOm/f, with its annual budget of €300,000, are highly appreciated: covering salary costs, giving research funding and postdoctoral positions, and organizing a biennial workshop for female researchers that serves as an informal exchange of information and experiences on subjects as diverse as writing research proposals, publishing in high-impact journals, and how to get organized to juggle children and career.

Despite these success stories, reaching 10% women in permanent positions in physics in this country is still a goal for the future. The fact that things are moving makes us optimistic: the future is bright for women in physics in the Netherlands!

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